

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

RESONANT SYSTEMS, INC., d/b/a §
RevelHMI, §
Plaintiff, §
v. §
SONY GROUP CORPORATION and SONY §
INTERACTIVE ENTERTAINMENT INC., §
Defendants. §

Civil Action No. 2:22-cv-424-JRG

JURY TRIAL DEMANDED

DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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I. INTRODUCTION

Defendants' constructions are consistent with the intrinsic evidence and statements made by the inventors during prosecution. The majority of Resonant's arguments are based on the lack of an express definition or disclaimer. However, the Federal Circuit has expressly rejected this heightened standard, explaining that “[o]ur case law does not require explicit redefinition or disavowal.” *Trustees of Columbia University in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1363-1364 (Fed. Cir. 2016) (finding that “a claim term may be clearly redefined without an explicit statement of redefinition” and “[e]ven when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents”) (citing *Phillips*). When viewed through the proper lens of the specification and prosecution history, Defendants' constructions are overwhelmingly supported and necessary to assist the jury in this case.

In contrast, Resonant's proposed constructions are rife with inconsistencies. For example, Resonant agrees the preamble of claim 1 of the '081 Patent is limiting during prosecution but argues the identical preamble in claim 2 of the '337 Patent based on the same specification is not. Resonant also agrees a CPU, processor, and microprocessor are general-purpose computers that require an algorithm to perform the claimed function but then inexplicably argues, with no support, that a microcontroller somehow does not require any programming. These inconsistent positions are not supported by the evidence or the law and should be rejected.

II. ARGUMENT¹

A. Preamble of '337 Patent, Claim 2

Defendants' Proposal	Plaintiff's Proposal
The preamble is limiting	The preamble is not limiting

¹ In an effort to limit the issues before the Court, Defendants no longer ask that the Court construe the term “moveable component” or argue that it invokes §112 ¶ 6.

The Court should adopt Defendants' construction as it is consistent with and warranted by the specification, file history, Resonant's own agreements, and the law.

The preamble "recites essential structure," because without limiting the preamble, the claims would encompass the prior art the inventors sought to distinguish their invention from, as evidenced by the specification and file histories of the Asserted Patents (discussed above). *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). Indeed, to determine whether the preamble is limiting, courts look to the plain meaning of the claim, the written description in the specification, and the prosecution history. *See, e.g., Shoes by Firebug LLC v. Stride Rite Children's Grp., LLC*, 962 F.3d 1362, 1367 (Fed. Cir. 2020) ("Whether to treat a preamble as a limitation is a determination resolved only on review of the entire patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim."); *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989). For example, the preamble may limit the claim scope if a patent applicant "clearly relie[s]" on the preamble to distinguish its invention from the prior art. *Hearing Components, Inc. v. Shure Inc.*, 600 F.3d 1357, 1366 (Fed. Cir. 2010). The preamble may also be limiting when "[t]he specification is replete with references to the invention as [described in the preamble], including the title of the patent itself and the 'Summary of the Invention.'" *Poly-Am., L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004).

The Court need look no further than Resonant's own arguments in its brief and disclaimers in the file histories. In the parties Joint Claim Construction Statement, Resonant agreed that the preambles of three claims in the '081 and '830 Patents, which are continuations of the '337 Patent, are limiting. Dkt. 53 at 1 (agreeing that the preambles of claims 1 of the '081 Patent and claims 1 and 20 of the '830 Patents are limiting). The preamble of claim 2 of the '337 Patent recites a "linear vibration module," which is identical to the preamble of claim 1 of the '081 Patent that

Resonant agrees is limiting. *Compare* Dkt. 62-4 ('337 Patent) at 16:1 (claim 1) *with* Dkt. 62-2 ('081 Patent) at 15:36 (claim 1). Resonant acknowledges that certain preambles are limiting because “the preambles of those claims were used to distinguish prior art” which “transforms the preamble into a claim limitation” and constitutes a “disclaimer[] in the prosecution of child patents.” Dkt. 62 (Opening Brief) at 3. Resonant offers no reason why the identical preamble of claim 2 of the '337 Patent would not require the same disclaimer to overcome the prior art rejection. For this reason, the Court should construe the preamble of claim 2 of the '337 Patent as limiting because Resonant has distinguished the preamble of its claims from the prior art.

To justify its inconsistent treatment of identical preambles, Resonant argues that its disclaimer has no bearing on the preamble of the '337 Patent because it was made in the child '081 and '830 Patents. Dkt. 62 (Opening Brief) at 3. There is no such bright line rule. Indeed, Resonant's own citations recognize the importance of statements in related patents in the claim construction process. Specifically, “statement[s] made during prosecution of related patents may be properly considered in construing a term common to those patents, ***regardless of whether the statement pre- or post-dates the issuance of the particular patent at issue***” because the prosecution history “demonstrates how the inventor understood the inventions, which is relevant to all related patents in which the term is used[.]” *Oyster Optics, LLC v. Ciena Corp.*, No 4:17-cv-005920, Dkt. 127, at 12–13 (N.D. Cal. Aug. 10, 2020) (collecting cases).² This is consistent with the great weight of Federal Circuit cases holding that where related patents share common terms, they should be construed consistently. *See, e.g., In re Rambus Inc.*, 694 F.3d 42, 48 (Fed. Cir. 2012) (quoting *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003) (“The same claim term

²Resonant's other cited authority from this Court does not appear to support Resonant's position or contain the quote provided in Resonant's brief. *See* Dkt. 62, at 3–4 (citing *Oyster Optics, LLC v. Corian Am. Inc.*, No. 2:16-cv-1302-JRG, 2018 WL 3067727, at *4 (E.D. Tex. June 21, 2018)).

in the same patent or related patents carries the same construed meaning.”); *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1316 (Fed. Cir. 2015) (“Where multiple patents ‘derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents.’”) (internal citations omitted); *In re Katz Interactive Call Processing Pat. Litig.*, 639 F.3d 1303, 1325 (Fed. Cir. 2011) (“[W]e ordinarily interpret claims consistently across patents having the same specification.”); *Abtox, Inc. v. Exitron Corp.*, 131 F.3d 1009, 1010 (Fed. Cir. 1997) (“Although these claims have since issued in separate patents, it would be improper to construe this term differently in one patent than another, given their common ancestry.”). There is no reason here to depart from this well-established law, particularly where the patents share a specification and recited identical preambles. Any disclaimer as to one preamble is highly informative as to the meaning of the same preamble from the parent ’337 Patent.

While Resonant does not point to the disclaimer, it can be found at least in Resonant’s distinguishing prior art where the controller alleged as the “control component” was located “in a computer... **separate from the vibrating device.**” Ex. A (’830 File History October 23, 2017 Resp. to OA) at 3 (emphasis added). According to Resonant, the prior art reference’s control component and vibrating device “are **separate units and not contained in a vibration module** and thus in contrast to the language of Applicants’ claim 1, which recites that the ‘vibration module [comprises] ... [the] control component ... to cause the moveable component to oscillate at a frequency and amplitude specified by one or more stored values.’” *Id.* at 4 (emphasis added).

Not only did Resonant distinguish the preamble from prior art during prosecution, the specification repeatedly contrasts the prior art “unbalanced electronic motor” used for generating vibrations from a linear resonant vibration module (“LRVM”). Dkt. 62-4 (’337 Patent) at 1:23–3:3 and Figs. 1-3 (describing background and problems associated with unbalanced electric

motors), 4:23–26 (“The linear nature of the LRVM . . . allows the problems associated with unbalanced-electric-motor vibrators, discussed above, to be effectively addressed.”), 9:1–3, 12:28–31. Indeed, the title of the ’337 Patent is “Linear Vibration Modules and Linear-Resonant Vibration Modules.” *Id.* at Title. In line with this, the specification also repeatedly states: “The current application is directed to various linear vibrational modules[.]” *Id.* at Abstract, 3:6–9, 4:13–17, 4:17–19 (“The LVMs and LRVMs that represent embodiments of the current application are linear”), 4:44–47 (“FIGS. 4A–G illustrates one particular LRVM”). The specification also provides numerous examples, each described as an implementation of an LRVM. *Id.* at 4:44–47, 9:9–11, 10:42–44. Thus, the specification clearly differentiates a linear vibration module with the unbalanced electric motors of the prior art. Because the applicants have repeatedly contrasted their “vibration module” from the prior, the the preambles are limiting. *Corning Glass*, 868 F.2d at 1257.

Finally, Resonant suggests that “terms such as the ‘control component,’ ‘driving component,’ and ‘movable component,’ [] describe how linear vibration is used” Dkt. 62 (Opening Brief) at 3. However, these limitations do not use the phrase “vibration module” or “linear vibration module” as is done throughout the specification to describe the invention. Instead, the claims describe what is included in the module and how each respective component in the vibration module operates.³ This does not undo Resonant’s disclaimers or statements in the specification describing its invention.

The Court should construe the preamble of claim 2 of the ’337 Patent as limiting.

³ Resonant’s expert declaration adds nothing but instead is a conclusory, verbatim parrot of Resonant’s brief with no explanation or analysis. Dkt. 62 (Opening Brief) at 3 (citing Dkt. 62–5 (Baker Decl.) at ¶ 24).

B. “vibration module” (’337 Patent, Claims 2-3; ’081 Patent, Claims 1-8, and 17; ’830 Patent, Claims 1-8, 17, and 20)

Defendants’ Proposal	Plaintiff’s Proposal
“vibrating device”	Plain and ordinary meaning

As discussed above, the preambles of the Asserted Patents each include the phrase “vibration module” and are limiting. Accordingly, construction of the term “vibration module” is appropriate. Defendants’ construction is consistent with the intrinsic evidence, including the inventors’ own statements during prosecution, and should be adopted.

Resonant relies, incorrectly, on the oft-cited proposition that construing a claim is improper if there is no lexicography or disclaimer. *See* Dkt. 62 at 4 (citing *Thorner*). This is not the law. Since *Thorner*, the Federal Circuit has repeated its holding that “[o]ur case law does not require explicit redefinition or disavowal.” *Barrday, Inc. v. Lincoln Fabrics Inc.*, No. 2022-1903, 2023 WL 7871688, at *5 (Fed. Cir. Nov. 16, 2023) (quoting *Columbia University in City of New York v. Symantec Corp.*, 811 F.3d 1363-1364 (Fed. Cir. 2016)). Indeed, *Columbia University* held that “the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.” *Columbia University*, 811 F.3d 1363-1364 (citing *Phillips* and rejecting “argument that the presumption of plain and ordinary meaning can be overcome [] only” where there is no lexicography and disclaimer); *see also Astrazeneca AB v. Mut. Pharm. Co.*, 384 F.3d 1333, 1339 (Fed. Cir. 2004) (the patentee “seems to suggest that lexicography requires a statement in the form ‘I define _____ to mean _____’ such rigid formalism is not required.”). The specification and file history support Defendants’ construction.

The specification expressly states that “[t]he current application is related to vibration-generating *devices*.” Dkt. 62-2 (’081 Patent) at 1:15-16. In addition, during prosecution of the ’830

Patent discussed in the preceding section, the applicants distinguished the Houston prior art reference because the alleged control component of the prior art “resides in a computer, and is separate from the *vibrating device*[.]”. Ex. A ('830 File History October 23, 2017 Resp. to OA) at 3-4 (referring to the “vibration module” as “the vibrating device”). The applicants continued in arguing that “the stored values of Houston are not in the same module as the *vibrating device*.” *Id.* Thus, the applicants plainly described and understood the “vibration module” to mean a “vibrating device.”

Defendants are not arguing that these statements disclaimed a “vibration module” in favor of a “vibrating device” as Resonant appears to contend. Rather, Defendants’ construction is simply a more understandable articulation of the meaning of “vibration module” as understood and used repeatedly by the inventors.

Accordingly, the Court should construe “vibration module” to mean “vibrating device.”

C. “a control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by [user input received from the user input features] / [one or more stored values]” ('337 Patent, Claim 2; '081 Patent, Claim 1; '830 Patent, Claims 1, 20)

Defendants’ Proposal	Plaintiff’s Proposal
Subject to 35 U.S.C. § 112 ¶ 6. <u>Function:</u> controlling supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by user input received from user-input features" ('337 Patent, claim 2; '081 Patent, claim 1); "controlling supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by one or more stored values" ('830 Patent, claims 1, 20)	Subject to 35 U.S.C. § 112 ¶ 6. <u>Function:</u> controlling supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by [user input received from the user-input features / one or more stored values] <u>Structures:</u> oscillator circuit; microcontroller with internal or external memory ; processor; CPU; microprocessor; and equivalents thereof [if an algorithm is required] Where the corresponding structure is a processor, CPU, or microprocessor, the

<p>Structures: an oscillator circuit, a microcontroller with internal or external memory, a processor, a CPU, or a microprocessor <u>contained within the vibrating device</u> where the microcontroller, processor, CPU, or microprocessor are programmed with an algorithm comprising the following steps: (a) set the mode and strength to [default values or] values representing selections made by user input to the user input features; and (b) provide a corresponding output to the power supply so that the power supply provides a corresponding output to the driving component</p>	<p>processor/CPU/microprocessor is programmed with an algorithm comprising the following steps: (a) set the mode and strength to [default values or] values representing selections made by user input to the user input features; and (b) provide a corresponding output to the power supply so that the power supply provides a corresponding output to the driving component</p> <p><i>See, e.g., '081 patent at 7:10-24, 8:10-20, Figs. 7A, 7C; '830 patent at 7:20-34, 8:20-30, Figs. 7A, 7C</i></p>
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The parties agree that this limitation is subject to §112 ¶ 6 and agree on the function performed by the structure. The dispute arises with respect to the appropriate structures for performing the recited functions. Resonant advances two erroneous arguments to dispute Defendants' proposed construction: (1) that the microcontroller-based embodiment of the claimed invention does not require an algorithm to perform the claimed function; and (2) that Defendants are improperly requiring the control component structure to be contained within the vibrating device/module. Dkt. 62 (Opening Brief) at 6-8. Each argument is addressed in turn below.

1. The Microcontroller Embodiment Requires an Algorithm

As noted by Resonant, "The first dispute is whether a microcontroller-based embodiment of the claimed invention requires an algorithm to perform the claimed function." Dkt. 62 (Opening Brief) at 7. There is no doubt that the microcontroller embodiment requires programming, or an algorithm, to perform the recited functions, which is confirmed by the specification.

Resonant alleges the microcontroller should not "be treated just like the disclosed processor, CPU, and microprocessor" because it "is not a general-purpose computer but instead provides more specific functionality sufficient to perform the claimed function without additional special programming." *Id.* Thus, Resonant's argument implies that one could simply put an off-

the-shelf microcontroller into a linear vibration module, and it would automatically perform the claimed function without any programming whatsoever. This is not credible, nor is it supported by the intrinsic or extrinsic record.

Resonant cites a large swath of the '081 Patent specification to purportedly support its argument, but those portions of the specification reveal the opposite. *Id.* (citing Dkt. 62-2 ('081 Patent) at 10:53-13:51). Rather than identifying the microcontroller as having any specific functionality sufficient to perform the claimed function, the specification uses the term "microcontroller" interchangeably with the other general-purpose computer embodiments, including the processor, CPU, and microprocessor, which Resonant agrees require an algorithm:

As discussed above with reference to FIG. 6, including a **processor or microcontroller** within a linear-resonant vibration module allows for a very large number of different processor-controlled vibration patterns and modes to be exhibited by the linear-resonant vibration module.

Dkt. 62-2 ('081 Patent) at 10:53-57 (emphasis added).

A **processor or microcontroller-controlled** linear-resonant vibration module, as discussed above with reference to FIGS. 4A-18, can access an even larger region of amplitude/frequency space that includes region 2010 with a subspace.

Id. at 12:31-35 (emphasis added).

In certain low-Q linear vibration modules that lack **microprocessor or microcontroller control**, for any given frequency of operation, the amplitude tends to increase with decreasing frequency of operation.

Id. at 12:36-39 (emphasis added).

A low-Q linear vibration module without **microprocessor or microcontroller** control can obtain a more constant amplitude over a broader range of frequencies by adjusting the current or duty cycle downward at lower frequencies.

Id. at 12:48-51 (emphasis added).

"In a linear-resonant vibration module, discussed above, by maintaining device operation at a resonant frequency, the linear-resonant vibration module is a relatively high-Q device, and generally operates more efficiently to produce a given vibration amplitude than a low-Q device, such as a linear vibration module lacking

microprocessor or microcontroller control and operating at a frequency/amplitude setting that does not correspond to a natural vibration mode of the device.”

Id. at 13:42-50 (emphasis added); *see also* Dkt. 62 at 7-8.

The specification also describes an alternative, lower-cost embodiment where “**the processor or microcontroller (602 in FIG. 6)**” is replaced “with a simpler oscillator circuit with additional control circuitry.” *Id.* at 11:43-47 (emphasis added). It is undisputed that the oscillator embodiment would not require an algorithm because it is a simple electronic circuit. However, the specification expressly contrasts the oscillator embodiment with “**the processor or microcontroller (602 in FIG. 6)**” embodiment, where reference numeral 602 corresponds to the CPU in Fig. 6. *Id.* at 11:43-47; *see also*, *id.* at Fig. 6.

Regarding “**the processor or microcontroller (602 in FIG. 6)**,” the specification further confirms that “**the LRVM 600 is controlled by a control program executed by the CPU microprocessor 602.**” *Id.* at 6:11-12 (emphasis added); *see also*, *id.* at 13:3-9 (“Returning to **microprocessor-controlled or microcontroller-controlled** linear vibration modules, it should be noted that processor or microprocessor control allows for an essentially limitless number of different vibrational behaviors and modes **to be configured by software or firmware design**, by user input, **or by a combination of software or firmware design** and user input.”), 13:10-13 (“As one example, a **microprocessor-controlled or microcontroller-controlled linear vibration module can be programmed...**”) (emphasis added).

Thus, the specification expressly requires the CPU, processor, microprocessor, **and microcontroller** 602 to be controlled by a control program, thereby confirming the need for an algorithm to perform the claimed function.

Resonant also cites its expert, Dr. Baker, as extrinsic support for its argument. .” Dkt. 62 (Opening Brief) at 7 (citing Dkt. 62-5 (Baker Decl.) at ¶ 32). However, Dr. Baker’s testimony

merely parrots Resonant’s broad, conclusory argument that a microcontroller would not require an algorithm without providing any technical reasoning or support in the intrinsic record for his opinion. Dkt. 62-5 (Baker Decl.) at ¶ 32. As such, Dr. Baker’s testimony should be given no weight. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc) (“[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.”); *Novartis Corp. v. Ben Venue Labs., Inc.*, 271 F.3d 1043, 1050-55 (Fed. Cir. 2001) (“Whether in the context of claim construction or summary judgment, conclusory expert testimony is not entitled weight.”).

Resonant’s reliance on *HTC Corp. v. IPCOM GmbH & Co., KG*, 667 F.3d 1270 (Fed. Cir. 2012) fails to provide any legal support for the proposition that a microcontroller-based embodiment of the claimed invention does not require an algorithm to perform the claimed function. Dkt. 62 (Opening Brief) at 7-8. In fact, *HTC Corp.*, suggests the opposite—that a microcontroller embodiment must include an adequate algorithm. There, the Federal Circuit affirmed the district court conclusion that the structure corresponding to the “arrangement for reactivating” limitation was “a processor connected to a transceiver and programmed to formulate and send messages to reactivate the link, if the handover is unsuccessful.” *HTC Corp.*, 667 F.3d at 1278. Although the specification did not literally disclose a processor and transceiver, the Federal Circuit affirmed the district court conclusion that it had “no doubt that one skilled in the art would immediately deduce that a processor with a transceiver was the structure indicated by the term.” *Id.* at 1278-79. Further, the Court explained that in addition to a processor and transceiver, “the structure necessary to support the functional claiming in claims 1 and 18 of the ‘830 patent **must include an adequate algorithm** describing how a processor and transceiver can perform the claimed function.” *Id.* at 1283. The Court, however, declined to overturn the district court’s

decision on this point because the accused infringer (HTC) failed to adequately preserve the algorithm issue. *Id.*

Thus, the evidence, the law, and common sense show that the microcontroller embodiment requires an algorithm to perform the claimed function. The Court should reject Resonant's unsupported arguments to the contrary.

2. *The Control Component Structure Must be Contained Within the Vibration Device/Module*

Without providing any legal authority, Resonant alleges that Defendants' proposed construction requiring the corresponding structure to be "contained within the vibrating device" is "unwarranted under § 112 ¶ 6, which limits what the claimed structure is rather than where it is located." Dkt. 62 (Opening Brief) at 8. On the contrary, the law expressly permits structures to include requirements as to where the structure is located. *See e.g., Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC*, 57 F.4th 1001, 1012-13 (Fed. Cir. 2023) (affirming a district court's construction requiring the corresponding structure of a means-plus-function term to be "located in at least one bottom section"); *NOMOS Corp. v. BrainLAB USA, Inc.*, 357 F.3d 1364, 1367-68 (Fed. Cir. 2004) (affirming the district court's construction of a "means for generating at least one ultrasound image" as requiring the ultrasound probe to be mounted to the treatment table by a fixation device).

The intrinsic record expressly supports the requirement for the "control component" structure to be located in the vibrating device/module. First, the specification only describes that the oscillator circuit, microcontroller, processor, CPU, or microprocessor are located within the LRVM. For example, Fig. 6, which "provides a block diagram of the LRVM," shows that the CPU 602 (i.e., control component) is located within the LRVM and not in a different device. Dkt. 62-2 ('081 Patent) at 3:41-44; *see also, id.* at Fig. 6, 6:11-42 (describing CPU 602's connections with

other LRVM components, including the user input features, power supply, and H-Bridge circuit); 10:53-57 (“As discussed above with respect to FIG. 6, ***including a processor or microcontroller*** [i.e., control component] ***within a linear-vibration module***”). “All of these components are packaged together as an LRVM within a vibration-based appliance, device, or system. *Id.* at 6:9-10. Likewise, the provisional application upon which all the asserted patents claim priority is directed to an “adult sex toy” containing the CPU/microcontroller in the same device as the moving mass and other components. Ex. B (Provisional Application) at 10-15. “When the scope of the invention is clearly stated in the specification, and is described as the advantage and distinction of the invention,’ it is informative as to claim construction. *Barrrday*, 2023 WL 7871688, at *5 (internal citations omitted).

Second, the placement of the control component within the vibration module was also made expressly clear during prosecution. As discussed above, Resonant disclaimed certain subject matter during prosecution, which Resonant concedes. Dkt. 62 (Opening Brief) at 3. Specifically, Resonant distinguished over prior art where the alleged control component was located “in a computer... **separate from the vibrating device.**” Ex. A (’830 File History October 23, 2017 Resp. to OA) at 3 (emphasis added). According to Resonant, the prior art reference’s computer and vibrating device “are **separate units and not contained in a vibration module** and thus in contrast to the language of Applicants’ claim 1, which recites that the ‘vibration module [comprises] ... [the] control component ... to cause the moveable component to oscillate at a frequency and amplitude specified by one or more stored values.’” *Id.* at 4. In other words, Resonant expressly and unambiguously distinguished its invention from a system in which the control component is not contained within the vibration module.

The asserted claims of the ’081 and ’337 Patents include a similar requirement for the linear

vibration module to comprise “a control component … to cause the moveable component to oscillate at a frequency and amplitude specified by user input received from the user-input features.” Dkt. 62-2 (’081 Patent) at 15:36, 15:44-48; Dkt. 62-4 (’337 Patent) at 16:1, 16:9-13. And, as discussed above, the meaning of identical terms across related patents should be construed consistently.

Finally, Resonant also alleges that Defendants’ construction should be rejected “because it uses the phrase ‘vibrating device[.]’” Dkt. 62 (Opening Brief) at 8. As discussed above, Defendants chose “vibrating device” based on Resonant’s own words. Ex. A (’830 File History October 23, 2017 Resp. to OA) at 3 (describing the vibration module as a “vibrating device”). To the extent the Court declines to adopt Defendants’ construction of “vibrating device,” requiring the “control component” structure to be located “within the vibration module” would be equally appropriate in view of the applicants’ disclaimers.

Thus, the Court should adopt Defendants’ construction as it is supported by both the law and the intrinsic record.

D. “a primary oscillation frequency modulated by a modulating oscillation frequency”, “a beat frequency”, and “an aperiodic oscillation waveform” (’337 Patent, Claim 3; ’081 Patent, Claim 16; ’830 Patent, Claim 16)

Claim Term	Defendants’ Proposal	Plaintiff’s Proposal
“a primary oscillation frequency modulated by a modulating oscillation frequency”	“a primary oscillation frequency modulated by a modulating oscillation frequency to produce low frequency pulses of high-frequency vibration such as depicted in Fig. 22B”	No construction necessary; plain and ordinary meaning
“a beat frequency”	“two driving frequencies combine to produce a lower frequency beat waveform such as depicted in Fig. 23”	No construction necessary; plain and ordinary meaning
“an aperiodic oscillation waveform”	“a vibration waveform that does not repeat in time”	No construction necessary; plain and ordinary meaning

Claim 3 of the ’337 Patent and Claim 16 of the ’081 and ’830 Patents recite, “wherein the

complex vibration modes include: a primary oscillation frequency modulated by a modulating oscillation frequency, a beat frequency, and an aperiodic oscillation waveform.” Defendants offer constructions of these terms that are consistent with the specification as required by the law. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (*en banc*) (“Claims must always be read in light of the specification.”) (*quoting In re Fout*, 675 F.2d 297, 300 (CCPA 1982)); *see also id.* (“The specification is ... the primary basis for construing the claims.”) (internal quotation marks and citation omitted).

The asserted patents provide informative descriptions for each of these different types of “complex vibration modes.” Regarding “a primary oscillation frequency modulated by a modulating oscillation frequency,” the specification states that Fig. 22B “illustrates a vibration mode of the linear vibration module driven at a **primary operational frequency** of 25 Hz with an added **modulating 1 Hz operational frequency**” and that “[d]riving the linear vibration module by both a **primary and a modulating frequency produces low-frequency pulses of high-frequency vibration.**” Dkt. 62-4 (’337 Patent) at 13:23-28 (emphasis added); *see also, id.* at Fig. 22B.

Likewise, regarding “a beat frequency,” the specification states that Fig. 23 “illustrates a **different complex vibrational mode** in which two driving frequencies combine to produce a lower-frequency **beat-wave form**” where “a primary driving frequency of 25 Hz, as in FIG. 22A, with a second driving frequency of 20 Hz.” *Id.* at 13:29-33; *see also, id.* at Fig. 23.

Regarding “an aperiodic oscillation waveform,” the specification describes “fully a[!]periodic vibration modes that do not repeat time.” Dkt. 62-4 (’337 Patent) at 13:40-41. Resonant alleges this term “simply refers to a waveform that is irregular” and contends that “a POSITA would understand that a random noise waveform would be ‘aperiodic’ even if it is played as a two-

second repeating loop.” Dkt. 62 (Opening Brief) at 12. To support this interpretation, Resonant only relies on the conclusory testimony of Dr. Baker, who yet again fails to provide any factual basis for his opinion. *Id.* (citing Dkt. 62-5 (Baker Decl.) at ¶¶ 47-48). In contrast, Defendants’ construction is consistent with and supported by the specification.

Regarding all these terms, Resonant alleges that “Sony seeks to limit the scope of the term only to particular usages within the specification” and that “Sony’s construction, and those of the terms below, seek to import the embodiments shown in Figs. 22A, 22B, and 23 into the claims.” Dkt. 62 (Opening Brief) at 8-9, 11 (“As with ‘primary oscillation frequency modulated by a modulating oscillation frequency,’ Sony appears to be importing the specification’s discussion of Fig. 23 into the claims.”), 12 (“Sony appears to be importing the patent’s discussion of Figs. 22A, 22B, and 23 into the claims.”). This is false. As is plain from Defendants’ construction of these terms, Defendants interpret these terms consistent with the specification. Nothing in Defendants’ constructions limits these terms to exactly what is described in the specification. Instead, the references to Figures in Defendants’ constructions are exemplary only as evident from the use of “such as depicted in.”

Resonant’s overarching position for these terms seems to be that any waveform qualifies as any one of these complex vibration modes. As noted above, Resonant alleges that a periodic waveform that repeats every two seconds qualifies as “aperiodic.” Dkt. 62 (Opening Brief) at 12. Likewise, Resonant alleges that the “primary oscillation frequency modulated by a modulating oscillation frequency” and “beat frequency” complex vibrational modes may be “any number complex vibrational patterns and modes” *Id.* at 10, 11 (citing Dkt. 62-4 (’337 Patent) at 13:36-41). Thus, it seems as though Resonant seeks to use its “plain and ordinary” interpretation of these terms to assert that any waveform qualifies as any one of these three different types of complex

vibration modes. This is contrary to the law because the Federal Circuit “instructs that different claim terms are presumed to have different meanings.” *MicroStrategy Inc. v. Business Objects Americas*, 238 F. App’x 605, 609 (Fed. Cir. 2007) (citing *CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed.Cir.2000) (“In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.”); *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n. 3 (Fed.Cir.2006) (“[T]he use of two terms in a claim requires that they connote different meanings....”)). The Court should adopt Defendants’ constructions to prevent Resonant from rendering these claim terms superfluous. *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 810 (Fed. Cir. 2021) (“It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous.” (quoting *Wasica Fin. GmbH v. Cont’l Auto. Sys.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017)).

Finally, Resonant relies on the testimony of its expert, Dr. Baker, to contend that each of these terms would be readily understood by a POSITA and jury.” Dkt. 62 (Opening Brief) at 8 (citing Dkt. 62-5 (Baker Decl.) at ¶¶ 33-38); 11 (citing Dkt. 62-5 (Baker Decl.) ¶ 40), 12 (citing Dkt. 62-5 (Baker Decl.) at ¶ 47). However, Dr. Baker’s conclusory expert testimony again only parrots, nearly word for word, Resonant’s brief. Dkt. 62-5 (Baker Decl.) at ¶¶ 33-38, ¶ 40, ¶ 47. Neither Resonant nor Dr. Baker offer any evidence that these terms would be readily understood by a jury. Indeed, Dr. Baker does not offer any opinions whatsoever about what a jury would understand. *Id.*⁴ Courts routinely discount such conclusory, unsupported testimony. *Phillips v.*

⁴ Dr. Baker also misleadingly opines that Defendants did not construe these terms in the co-pending IPRs and concludes that this “shows that a POSITA would understand the term.” Dkt. 62-5 (Baker Decl.) at ¶ 38, ¶ 44, ¶ 49. However, Dr. Baker failed to account for the fact that Defendants expressly interpreted these terms consistent with the above-cited portions of the specification despite not offering express constructions. *See, e.g.*, Ex. C (Sony’s ’081 IPR Petition) at 68-73.

AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005) (*en banc*) (“[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.”).

E. Indefiniteness of Claim 4 ('081 and '830 Patents, Claims 4, 5, 6)

Claim Term	Defendants' Proposal	Plaintiff's Proposal
“claim 1” ('081 and '830 Patents, Claim 4)	Plain and ordinary meaning.	“claim 3”; not indefinite
“the one or more operational control outputs” ('081 and '830 Patents, Claims 4-6)	Indefinite	Plain and ordinary meaning; not indefinite

The Parties agree there is no antecedent basis for “the one or more operational control outputs” of Claim 4. In fact, Resonant acknowledges that there are at least three phrases that are preceded by “the” introduced in claim 4 that have no antecedent basis. Dkt. 62 (Opening Brief) at 14. Accordingly, Claim 4 is indefinite. *See Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008) (“[I]f a term [in that claim] does not have a proper antecedent basis where such basis is not otherwise present by implication, or the meaning is not reasonably ascertainable,” it is indefinite).

To avoid a finding that the claim is indefinite, Resonant asks the Court to judicially correct claim 4 to depend on claim 3. Dkt. 62 (Opening Brief) at 13-14. However, the Court cannot make such a correction where, as here, the proposed correction is subject to reasonable debate and “the district court [is] required to guess as to what was intended.” *Novo Industries, L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1357–58 (Fed. Cir. 2003); *Cellular Commc'n Equip. LLC v. AT&T, Inc.*, No. 2:15-CV-576-RWS-RSP, 2016 WL 7364266, at *10 (E.D. Tex. Dec. 19, 2016) (“Judicial correction of an error in a patent may be available ‘only if (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims.’”) (quoting *Novo Industries*). Moreover, Resonant, as the party advocating for judicial correction, bears the burden

of proof. *See Guzik Technical Enterprises, Inc. v. Western Digital Corp.*, No. 11-CV-03786-PSG, 2013 WL 3934892, at *27 (N.D. Cal. Jul. 29, 2013).

Here, Resonant cannot show that its preferred correction—correction 2, below—is the only reasonable correction. Indeed, another equally plausible correction is to remove the definite article “the” before each of the terms (correction 1, below).

Correction 1

4. The [linear] vibration module of claim 1 wherein the control component adjusts ~~the~~ one or more operational control outputs of the control component according to ~~the~~ received output signals from ~~the~~ sensors in order that subsequent operation of the [linear] vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.

Correction 2

4. The [linear] vibration module of claim ~~4~~ [3] wherein the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of the [linear] vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.

More importantly, the two interpretations of claim 4 result in equally plausible, but different, claim scope. Specifically, if the claim were corrected to be dependent on claim 3 (correction 2), the sensors would be required to be within the [linear] vibration module. *See* Dkt. 62-2 ('081 Patent) and Dkt. 62-3 ('830 Patent) at claim 3 (“wherein the control component receives output signals from sensors within the [linear] vibration module”). However, if correction 1 were applied, there would be no such restriction. The specification arguably supports both possible interpretations as it does not limit the location of “sensors” to just to those “within the [linear] vibration module.” *See, e.g.*, Dkt. 62-2 ('081 Patent) at 6:2-8 (“The LRVM ... includes... one or more electromechanical sensors.”), 6:25-29 (“A power supply 612 provides power, as needed, to ... one or more sensors 632.”), Fig. 6 (depicting sensors 632 in a box diagram without limiting

their location to be within the [linear] vibration module). Thus, both corrections are equally plausible in light of the claims and the specification, and the correction is subject to reasonable debate.

Where, as here, a court “cannot know what correction is necessarily appropriate or how the claim should be interpreted,” the claim must be found indefinite. *See Novo Industries*, 350 F.3d at 1358. This ends the inquiry.⁵

Resonant argues that it is “more likely” the patentee made a “single-character typo” than adding the word “the” three times into the claims. Dkt. 62 (Opening Brief) at 15. This argument is irrelevant. *See Parthenon Unified Memory Architecture LLC v. Apple Inc.*, No. 2:15-CV-621-JRG-RSP, 2016 WL 3365945, *13–14 (E.D. Tex. 2016) (refusing to judicially correct a claim where the patentee proposed a one-word edit but there was another reasonable correction when rearranging four words); *Bella Summit LLC v. Gamebreaker, Inc.*, No. 2:21-CV-6007-JAK-MAR, 2022 WL 17882138, *7–8 (C.D. Cal. 2022) (similar). Defendants’ proposal is not less plausible than Resonant’s proposal merely because the former requires more keystrokes.

Finally, Resonant’s citation to *Ollnova* is inapposite. In *Ollnova*, the requested correction clarified a grammatical error that the Court held would not affect the claim’s scope. *Ollnova Techs. Ltd. v. ecobee Techs.*, ULC, No. 2:22-CV-00072-JRG, 2023 WL 2871051, at *5-6 (E.D. Tex. Apr. 10, 2023) (“*Ollnova*’s proposed correction will not impact the scope of the claim, as the correction aligns with how a skilled artisan would understand the limitation in its uncorrected form. In other words, even without judicial correction, the term is not indefinite...”). Here, Resonant seeks to change claim 4 in a way that would import limitations and change its scope.

⁵ It should be noted that the relevant prosecution histories also provide no guidance. *See* Exs. D-F (File Histories for ‘081, ‘337, and ‘830 Patents).

F. “a strength of vibration produced by the linear oscillation of the moveable component” (’081 Patent, Claim 5; ’830 Patent, Claim 5)

Defendants’ Proposal	Plaintiff’s Proposal
“a value that corresponds to the amount of current applied to the driving component”	No construction necessary; plain and ordinary meaning

Resonant does not suggest that Defendants’ construction is incorrect or inconsistent with specification. Instead, Resonant argues that there is no lexicography or disclaimer. However, as discussed above, the Federal Circuit “does not require explicit redefinition or disavowal and “the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.” *Columbia University*, 811 F.3d at 1363-1364; *see also Astrazeneca AB*, 384 F.3d at 1339.

The specification supports Defendants’ construction and expressly describes the meaning of this phrase. Specifically, the specification explains that application of a current (i.e., 422, 430) to the driving component (i.e., coil, 420) is what drives linear oscillation of the moveable component (i.e., a solid, cylindrical mass 4040 or weight), which in turn produces vibration. *See* Dkt. 62-2 (’081 Patent) at 4:44-5:45 (describing application of current and movement of weight to produce vibration). The descriptions of Figures 6-7 further confirm that vibration produced by the linear oscillation of the moveable component corresponds to the amount of current applied to the driving component [i.e., coil]. *Id.* at 6:21-23 (“As one example [of user controls], the user controls may include a dial to select a **strength of vibration, which corresponds to the current applied to the coil**”) (emphasis added); 6:36-42 (“The CPU receives input 630 from one or more electromechanical sensors 632 that generate a signal corresponding to the **strength of vibration currently being produced by the linearly oscillating mass 634.**”) (emphasis added); 6:43-55 (describing Fig. 7A and *default values* of various local variables of the control program that controls operation of an LRVM that represents an implementation of the invention: “(2) **strength**

[of vibration], a numerical value corresponding to the current user-selected strength of operation, corresponding to the electrical current applied to the coil") (emphasis added).

Accordingly, Defendants' construction is clear from the specification and should be adopted.

For its part, Resonant argues that the patent teaches embodiments where electromechanical sensors signals that correspond to the strength of vibration. Dkt. 62 (Opening Brief) at 16-17. The fact that the patents teach "sensors" and "other types of sensors" that can "generate signals corresponding to the strength of desired vibrational forces" is neither disputed nor relevant to the patents' explanation that vibration produced by the linear oscillation of the moveable component corresponds to the amount of current applied to the driving component. *See* Dkt. 62 (Opening Brief) at 16-17 (quoting Dkt. 62-4 ('337 Patent) at 6:21-43). This portion of the specification says nothing about the meaning of or how to determine the "strength of vibration." Instead, this passage is consistent with Defendants' construction because the signal "corresponds to the strength of vibration currently being applied by the linearly oscillating mass." This does not change the fact that the "strength of vibration," in the first instance, is "a value [that] corresponds to the amount of current applied to the driving component," as described earlier in the passage. Resonant's attempt to obfuscate the clear meaning of this phrase should be rejected.

Because Defendants' construction is consistent with the specification and will assist the jury in determining whether the accused products satisfy this limitation, it should be adopted.

III. CONCLUSION

For the foregoing reasons, Defendants respectfully request the Court adopt their constructions.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on May 16, 2024, the foregoing was electronically filed in compliance with Local Rule CV-5(a) and served via the Court's electronic filing system on all counsel who have consented to electronic service.

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